IN THE CLAIMS

Please amend the claims as follows:

1 (Previously Presented). A gain switching circuit configured to switch a conversion gain of a preamplifier, the preamplifier being configured to output a voltage signal by amplifying an output current of a photo-detecting element configured to convert a burst optical signal into an electrical signal, the preamplifier being configured with a first series circuit formed with a first resistor and a first switching element and a second series circuit formed with a second resistor and a second switching element respectively connected in parallel with a feedback resistor, the gain switching circuit inputting a first gain switching signal defining a period for switching to a first conversion gain and a second gain switching signal defining a period for switching to a second conversion gain, said first gain switching signal and said second gain switching signal originating from outside of the gain switching circuit , the gain switching circuit comprising:

a first operating unit configured to generate a first switching element operating signal to close the first switching element in response to the voltage signal output by the preamplifier being above a first threshold during the period defined by the first gain switching signal originating from outside the gain switching circuit; and

a second operating unit configured to generate a second switching element operating signal to close the second switching element in response to the voltage signal output by the preamplifier being above a second threshold during the period defined by the second gain switching signal originating from outside the gain switching circuit.

2 (Previously Presented). The gain switching circuit according to claim 1, wherein the first gain switching signal defining the period for switching to the first conversion gain is different from the second gain switching signal defining the period for switching to

the second conversion gain.

3 (Previously Presented). The gain switching circuit according to claim 1, wherein the second operating unit is configured to close the second switching element after the first operating unit closes the first switching element.

4 (Canceled).

5 (Previously Presented). The gain switching circuit according to claim 1, wherein following relation is satisfied

$V1<kV2$

where V1 is the first threshold, V2 is the second threshold, and k is an amount of lowering a gain of the preamplifier when the first switching element is closed based on the first threshold.

6 (Previously Presented). A gain switching circuit configured to switch a conversion gain of a preamplifier, the preamplifier being configured to output a voltage signal by amplifying an output current of a photo-detecting element configured to convert a burst optical signal into an electrical signal, the preamplifier being configured with a first series circuit formed with a first resistor and a first switching element and a second series circuit formed with a second resistor and a second switching element respectively connected in parallel with a feedback resistor, the gain switching circuit comprising:

a gate generating circuit configured to generate a gate signal defining a period for switching to a predetermined conversion gain;

a first operating unit configured to generate a first switching element operating signal to close a first switching element in response to the voltage signal output by the preamplifier

being above a first threshold during the period defined by the gate signal generated by the gate generating circuit; and

a second operating unit configured to generate a second switching element operating signal to close a second switching element in response to the voltage signal output by the preamplifier being above a second threshold during the period defined by the gate signal generated by the gate generating circuit.

7 (Previously Presented). The gain switching circuit according to claim 6, wherein

the second operating unit is configured to close the second switching element after the first operating unit closes the first switching element.

8 (Canceled).

9 (Currently Amended). The gain switching circuit according to claim [[1]] 6, wherein

the gate generating circuit includes a counter circuit that generates a clock signal, and

the gate generating circuit generates a gate signal having a time width of a predetermined number of clocks by using the clock signal generated by the counter circuit.

10 (Currently Amended). The gain switching circuit according to claim 7, wherein

when the first switching element operating signal is generated using the first threshold and the second switching element operating signal is generated using the second threshold, the gate generating circuit generates the gate signal based on a third ~~discrimination level~~ threshold, and a fourth ~~discrimination level~~ threshold that satisfy

$V10<V11<V1$ and $V10<V11<V2$

where V1 is the first threshold, V2 is the second threshold, V10 is the third threshold, and

V11 is the fourth threshold.

11 (Currently Amended). The gain switching circuit according to claim 10, wherein the gate generating circuit includes

a first variation-point detecting circuit configured to detect a variation point of a signal that is detected at the third ~~discrimination level~~ threshold; and

a second variation-point detecting circuit configured to detect a variation point of a signal that is detected at the fourth ~~discrimination level~~ threshold, and

the gate generating circuit is configured to generate a logical product signal of a first basic gate signal that is generated by the first variation-point detecting circuit with a time width of a predetermined variation point count length and a second basic gate signal that is generated by the second variation-point detecting circuit with a time width of a predetermined variation point count length as the gate signal.